

Claims annexed to the IPER

1. A method for investigating a body fluid for cancer cells, where the expression of at least 2 genes which are selected from

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- i) manganese superoxide dismutase genes;
- ii) thioredoxin reductase genes; and
- iii) glutathione peroxidase genes

10 is determined on at least one cell-containing fraction of the body fluid.

2. The method as claimed in claim 1, characterized in that the expression of at least one manganese superoxide dismutase gene, of at least one thioredoxin reductase gene and of at least one glutathione peroxidase gene

15 is determined.

3. The method as claimed in claim 1 or 2, characterized in that the body fluid is selected from blood, bone marrow, lymph, sputum, lavages, puncture fluids, ascites, mucosal smears, exudates, urine and stool.

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4. The method as claimed in any of the preceding claims, characterized in that the cell-containing fraction is obtained from the body fluid with enrichment of cancer cells.

25 5. The method as claimed in any of the preceding claims, characterized in that

- the cell-containing fraction is obtained from the body fluid with enrichment of cancer cells, and the expression of the genes in the cell-containing fraction is determined,
- a further cell-containing fraction of the body fluid or of a comparable biological sample is provided, and the expression of the genes in the further cell-containing fraction is determined, and
- the expression for each gene in the cell-containing fraction is compared with its expression in the further cell-containing fraction.

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6. The method as claimed in claim 5, characterized in that the comparable biological sample is derived from the individual whose body fluid is investigated for cancer cells.

5 7. The method as claimed in either of claims 5 or 6, characterized in that it is determined whether expression of the genes in the cell-containing fraction is elevated by comparison with the expression of the genes in the further cell-containing fraction.

10 8. The use of a method as claimed in any of claims 1 to 7 for identifying disseminated cancer cells in an individual, in particular for early diagnosis of tumors, and for estimating the risk for the individual to develop a metastasis or a recurrence.

15 9. An analysis kit comprising

i) means for determining the expression of at least one manganese superoxide dismutase gene;

20 ii) means for determining the expression of at least one thioredoxin reductase gene; and

iii) means for determining the expression of at least one glutathione peroxidase gene,

25 and optionally further usual means for carrying out the method as claimed in any of claims 1 to 7.

10. An analysis kit as claimed in claim 9, comprising

30 i) sequence-specific primers and/or probes for determining the expression of at least one manganese superoxide dismutase gene;

ii) sequence-specific primers and/or probes for determining the

expression of at least one thioredoxin reductase gene; and

- iii) sequence-specific primers and/or probes for determining the expression of at least one glutathione peroxidase gene,

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and optionally further usual means for carrying out the method as claimed in any of claims 1 to 7.